



Transitioning Cereal Systems to Adapt to Climate Change

November 13-14, 2015

Minneapolis Convention Center
Suite 205 A-D
www.aridcereals.org

Thursday, November 12, 2015

Reception: 19:00-20:30, Millennium Hotel, Dome Room. No host bar, light refreshments.

Agenda

Friday, November 13, 2015

Stage and Scope: Plenary Session

08:00
Room 205

Welcome and conference overview

Sanford Eigenbrode, REACCH Project Director, University of Idaho

Welcome from **Phil Mulder**, President, Entomological Society of America

08:15

Opening keynote address

How to transition cereal systems from problem to solution to the climate change challenge

Hans Herren, President, Millennium Institute

08:45

Opening keynote address

Transitions and transformations: Climate extremes, hotspots and adaptation in semiarid regions

Roger Pulwarty, Director, National Integrated Drought Information System, NOAA

09:15

Cereal system conditions, global challenges and opportunities for adaptation

Moderator: Sanford Eigenbrode, REACCH Project Director, University of Idaho

Rapporteur: Bob Mahler, Professor, University of Idaho

Adapting to increasing climatic risks in south Asian agriculture: opportunities and constraints

Pramod Aggarwal, Regional Program Leader, CCAFS, New Delhi

New findings for climate change and food security in China

Xue Han, Research Assistant, IEDA, Chinese Academy of Agricultural Sciences

Climate change and cereal cropping systems of South America: The sensitivity and adaptation of cereals in the sub-continent

Daniel Calderini, Professor, Austral University, Chile

10:30

Break

11:00

Adapting cereal cropping systems to a changing climate in Australia

Garry O'Leary, Senior Research Scientist, Department of Environment and Primary Industries

Global challenges and opportunities for adaptation of cereal systems in sub-Saharan Africa

Peter Craufurd, Strategic Research Team Leader and Senior Scientist, CIMMYT, France

Cereal production systems in North America: Challenges for effective adaptation

Jerry Hatfield, Laboratory Director, USDA-ARS, Ames, Iowa

12:30

Luncheon keynote address

Seasons
Atrium

A sustainable approach to climate-adapted agricultural production

Ann Bartuska, USDA Deputy Undersecretary for Research, Education and Economics



Friday, November 13, 2015

Disciplinary Issues: Concurrent Sessions

13:30 **Concurrent Session A**

Room 210AB **Drought effects on water resources and crop production in semiarid regions**

Moderator: Chad Kruger, Director CSANR and NWREC, Washington State University
Rapporteur: Erin Brooks, Research Scientist, University of Idaho

Adaptation to drought under climate change: A global perspective

Stefan Siebert, Senior Scientist, University of Bonn

Direct and indirect effects of climate change on cereal productivity in the Pacific Northwest region of the U.S.

Jen Adam, Director, BioEarth, Washington State University

Understanding the importance of managing climate risk in the restoration and conservation of natural capital in the dryland cereal systems

Anthony Whitbread, Research Program Director, ICRIAT, India

Room 212AB **Cropping system improvements and innovation**

Moderator: Bill Pan, Professor and Extension Specialist, Washington State University
Rapporteur: Tai Maaz, Post Doc, Washington State University

Nutrient stewardship innovations for increased cereal system resilience

Paul Fixen, Senior VP, International Plant Nutrition Institute and 2016 ASA President

Innovations in Australian mixed cropping systems under climate change

John Kirkegaard, Senior Principal Research Scientist, CSIRO, Australia

Increasing productivity in rain fed, semiarid systems by analyzing and remediating limiting factors

Bram Govaerts, Associate Director, CIMMYT, Mexico

Room 205 **Crop protection: Pests, weeds and pathogens**

Moderator: Sanford Eigenbrode, Distinguished Professor, University of Idaho
Rapporteur: Hans Herren, President, Millennium Institute

From impact assessment to climate change adaptation: What do we need to know for invertebrate management in grains

Sarina Macfadyen, Ecologist, CSIRO Ecosystem Sciences, Australia

Managing disease in cereal systems

Karen Garrett, Preeminent Professor, University of Florida

Using weed germplasm as a means to adapt cereal crops to climate change and rising CO₂

Lewis Ziska, Research Plant Physiologist, USDA-ARS

The 'Push-Pull' farming system: Climate-smart sustainable agriculture for cereal-livestock production in Africa

Zeyaur Khan, Principal Scientist, ICIPE, Kenya

15:00 **Break**

Disciplinary Issues: Concurrent Sessions, *continued*

15:30 Concurrent Session B

Room 205

Genetic improvement and integration

Moderator: Sanford Eigenbrode, Distinguished Professor, University of Idaho

Rapporteur: Ian Burke, Associate Professor, Washington State University

Private sector breeding to prepare for changing climates

Edward Souza, Director, Global Wheat Breeding, Bayer Crop Science

Breeding for tolerance to heat and other climatic stresses for lower latitudes worldwide

Kulvinder Gill, Professor, Washington State University

Public sector breeding to prepare for changing climates

Jim Anderson, Professor Wheat Breeding and Genetics, University of Minnesota

Room 212AB

Identifying and assessing adaptation strategies

Moderator: Kate Painter, Assistant Professor, University of Idaho

Rapporteur: Laurie Houston, Associate Professor, Oregon State University

What we know about public and private adaptation strategies

Bruce McCarl, Regents Professor, Texas A&M University

Improving models and data for developing pathways for cropping system adaption to climate change

Jim Jones, Distinguished Professor, University of Florida

Assessing how economic adaptations affect vulnerability to climate change

John Antle, Professor, Oregon State University

Room 210AB

Greenhouse gases: Monitoring and approaches to mitigation

Moderator: Phil Robertson, Professor, Kellogg Biological Station, Michigan State University

Rapporteur: Brian Lamb, Professor, Washington State University

Greenhouse gas mitigation potential of dryland cropping systems in the U.S. Great Plains

Mark Liebig, Research Soil Scientist, USDA-ARS

Constraining soil-emitted GHGs from crop production on the Canadian semiarid prairies

Reynald Lemke, Research Scientist, Agriculture and AgriFood Canada

Is eddy covariance a suitable tool to establish greenhouse gas balance of cereals?

Marc Aubinet, Professor, University of Liege, Belgium

Nitrous oxide fluxes from cropping soils in a semiarid region in Australia: A 10-yr prospective

Louise Barton, Senior Research Fellow, University of Western Australia

Optimizing yield and reducing greenhouse gas emissions for resilient cropping systems in rain fed semiarid environments

Peter Grace, Professor, Queensland University of Technology, Australia

Poster Session

17:30

Poster Presentations

Seasons

Session A: 17:30

Atrium

Session B: 18:00

18:30

Reception

(Heavy hors d'oeuvres)

20:00

Adjourn for Evening



Saturday, November 14, 2015

Integration: Plenary Session

08:00
Room 205

Welcome and housekeeping issues

08:10

Summaries of Concurrent Sessions A and B

Moderator: Chad Kruger, Director CSANR and NWREC, Washington State University
Rapporteurs

09:40

Break

Integration: Concurrent Sessions

10:00

Concurrent Session C

Room 206AB

Cropping system models as platforms for integration

Moderator: Jerry Hatfield, Laboratory Director and Plant Physiologist, USDA-ARS
Rapporteur: Claudio Stöckle, Professor, Washington State University

Utilizing crop models as integration platforms

Peter Craufurd, Strategic Research Team Leader and Senior Scientist, CIMMYT, France

Response:

Steve Peterson, Director of Sourcing Sustainability, General Mills, retired

Helen Greatrex, Post Doc, Intl. Research Institute for Climate and Society, Columbia U.

Vara Prasad, Professor, Kansas State University

Senthold Asseng, Professor, University of Florida

Room 207AB

Collaborative translational science to address climate change in semiarid systems

Moderator: Corinne Valdivia, Associate Professor, University of Missouri
Rapporteur: Isaac Madsen, Ph.D. student, Washington State University

Agro-ecological classification of farmer risk perceptions and climate adaptation

J.D. Wulforst, Professor, University of Idaho

Linking local and scientific knowledge: Challenges and opportunities

Jere Gilles, Director of Graduate Studies in Rural Sociology, University of Missouri

Perceptions and management of soil quality: A transitional approach

Peter Motavalli, Professor, University of Missouri

Agricultural systems that enhance translation

Karen Garrett, Preeminent Professor, University of Florida

Room 213AB

Data management to enable regional and global efforts

Moderator: Cheryl Porter, Co-lead AgMIP IT Team, University of Florida
Rapporteur: Ed Flathers, Ph.D. student, University of Idaho

Wheat data management and sharing guidelines

Esther Dzale Yeuomo Kabore, Data and Knowledge Manager, French National Institute for Agriculture Research

Overview of CGIAR's open access, open data efforts

Medha Devare, Data and Knowledge Manager, CGIAR, France

Agricultural information supply chains – drivers and directions

Peter Fitch, Interoperable Systems Team Program Leader, CSIRO, Australia (video presentation)

Evolving an architecture for agricultural research data management in the US Pacific Northwest

Paul Gessler, Director, Northwest Knowledge Network, University of Idaho

Saturday, November 14, 2015

Action Planning

11:30 **Luncheon Keynote Address**
Seasons Atrium **An 80/20 approach to climate change adaptation in cereal systems**
David Lobell, Associate Professor, Stanford University

12:30 **Summaries of Concurrent Session C**
Room 205 Moderator: John Antle, Professor, Oregon State University
Rapporteurs
Wrap-up and Outlook

13:00 **Plenary Session: Synthesis and action to move beyond the conference ("The Solutions Room")**
Facilitator: Michael Binder, Consultant, The Missional Network

14:30 **Break**

15:00 **Action step themed breakout working groups**
Facilitator: Michael Binder, The Missional Network

Room 206A **Enhancing, harmonizing and applying modeling efforts and data access to improve analysis and development of adaptation strategies for wheat and other cereals**
Facilitator: John Antle, Professor, Oregon State University
Rapporteur: Hongliang Zhang, Post Doc, Oregon State University

Room 206B **Creating mechanisms to sustain the themes of the conference among ourselves and within our professional societies**
Facilitator: Bill Pan, Professor, Washington State University
Rapporteur: Rajan Ghimire, Assistant Professor, New Mexico State University

Room 207A **Strengthening and contributing to existing U.S. and international partnerships and initiatives**
Facilitator: Sanford Eigenbrode, Distinguished Professor, University of Idaho
Rapporteur: Patrick Binns, Principal, Westbrook Associates LLC

Room 207B **Building capacity and early career support efforts for graduate students working on resilient cereals challenges**
Facilitator: Corinne Valdivia, Associate Professor, University of Missouri
Rapporteur: Nicole Ward, M.S. student, University of Idaho

Room 213A **Communicating with and informing farmers and food system stakeholders**
Facilitator: Chad Kruger, Director CAANR, Washington State University
Rapporteur: Prakriti Bista, Post Doc, Oregon State University

Room 205 **Ad hoc session(s): TBD by participants during the conference**
Facilitator: Tim Paulitz, Research Plant Pathologist, USDA-ARS
Rapporteur: Dianne Daley Laursen, REACCH Project Manager, University of Idaho

Plenary Session: Closing Remarks

16:15 **Plenary Session: Working groups highlight reports**
Room 205 Facilitator: Michael Binder, Consultant, The Missional Network

17:00 **Closing Remarks**
Room 205 Sanford Eigenbrode, REACCH Project Director, University of Idaho